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TRADITIONAL KNOWLEDGE

Addendum

BUILDING LINKAGES BETWEEN ENVIRONMENTAL CONVENTIONS AND INITIATIVES

Note by the secretariat

By its decision 14/COP.2, paragraph 2(a), the Conference of Parties (COP) requested the secretariat to explore ways and means of linking the work of the Committee on traditional knowledge with similar work being undertaken under other related conventions and to report to the Committee on Science and Technology (CST) at its third session. The report prepared in response to this request is contained in this document.

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List of abbreviations

BSAP	biodiversity strategy and action plan
CBD	Convention on Biological Diversity
CIRAN	Centre for International Research and Advisory Networks
COP	Conference of the Parties
CST	Committee on Science and Technology (of the UNCCD)
FAO	United Nations Food and Agriculture Organization
GATT	General Agreement on Tariffs and Trade
IFF	Intergovernmental Forum on Forests
IIED	International Institute for Environment and Development
IPF	Intergovernmental Panel on Forests
ITFF	Inter-Agency Task Force on Forests
IUCN	World Conservation Union
IUPGR	International Undertaking on Plant Genetic Resources
MOST	Management of Social Transformations Programme
NAP	national action programme
SBSTA	Subsidiary Body for Scientific and Technological Advice (of the UNFCCC)
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice (of the CBD)
STRP	Scientific and Technical Review Panel (of the Ramsar Convention)
TRIPs	Trade-Related Aspects of Intellectual Property Rights Agreement
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNSO	Office to Combat Desertification and Drought
UPOV	International Union for the Protection of New Varieties of Plants
WGTRR	Working Group on Traditional Resource Rights
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

Executive summary

The purpose of this report is to explore the means of linking work being done by the Committee on Science and Technology of the United Nations Convention to Combat Desertification on traditional knowledge, with similar activity being undertaken under other related conventions.

Given the number of international initiatives stemming from the 1992 United Nations Conference on Environment and Development, held in Rio de Janeiro, some level of collaboration is essential.

The report begins with a short exposition of key concepts involved in the discussion. Thus it describes the attributes of traditional knowledge and clarifies the distinctions between traditional and modern scientific methods. The importance of traditional knowledge for the development of drylands is highlighted: harnessing the know-how of local people to develop appropriate technologies aimed at improving conditions and incomes in affected dryland areas.

The main chapters of the report discuss the provisions of the conventions which relate to the promotion of traditional and local knowledge and the rights of knowledge holders and the initiatives of the various convention institutions. The work of the UNCCD Committee on Science and Technology in this field is described, as well as the decision of the Conference of the Parties at its second session, which provides for a review of initiatives on traditional knowledge. The work of the Convention on Biological Diversity has a very high profile and the links established with the other environmental conventions are discussed. The CBD has appointed a programme officer to look in detail at the implementation of the Convention's provisions in relation to traditional knowledge. Several initiatives to look further into the role of the Convention in this field have been taken, such as the holding of a workshop on traditional knowledge and biodiversity in 1997 and the decision to convene an ad hoc working group meeting early in 2000. This meeting could represent a good forum in which the UNCCD secretariat could highlight its own role and concerns related to traditional knowledge.

As far as traditional forest-related knowledge is concerned, this was one of the issues left pending at the conclusion of the International Panel on Forests meeting in 1997. It has since been considered by the Intergovernmental Forum on Forests, with the CBD, as a member of the Inter-Agency Task Force on Forests, taking a leading role in developing the conclusions of the Forum on traditional knowledge.

The Ramsar Convention on Wetlands was originally oriented towards the conservation of nature without a specific emphasis on the people who made their livelihoods from these critical resources. The Convention has not focused its attention on traditional knowledge and methods thus far. However, in 1997, it began a process of examining the vital link between wetlands and people. This process culminated in the recently approved guidelines for the greater involvement of local

people in the management of wetlands, which could be instructive for other conventions to consider.

Much of the debate at the international level focuses on the intellectual property rights of indigenous and local peoples, with reference to the past exploitation of less developed legal systems to protect the resources of developing countries. The relevance of the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs) is outlined. Currently plant breeders' rights are given greater protection than farmers' rights. However, the important initiatives of FAO in the negotiations on the International Undertaking on Plant Genetic Resources are also highlighted.

The experience of other organizations should not be overlooked. UNESCO is responsible for a number of conventions which promote the cultural and heritage rights of indigenous peoples. In this report, the recent initiative to set up a database of best practices relating to traditional knowledge is highlighted and considered useful. UNEP is taking important steps to facilitate the coordination of environmental conventions and the initiatives later this year could provide valuable opportunities for greater collaboration and cooperation.

The conclusions of the report relate to the importance of sharing information concerning these initiatives, at the international level. This applies to all the relevant convention institutions, which should be apprised of the interests of the UNCCD in this field. There is a potential risk of duplication of efforts if coordination is not increased. It is important also to minimize requests for information at the national level unless there is clear guidance as to how this might be useful in the effective implementation of the Convention.

Although there is a great deal of complementarity between the UNCCD and the CBD, there is also a difference in emphasis between the two. The CBD places emphasis on the rights of indigenous and local knowledge holders over their knowledge base, often with reference to preventing exploitation by foreign companies. The UNCCD focus, on the other hand, is concentrated on the value of this knowledge in the improvement of rural livelihoods in dryland areas. The UNCCD could usefully highlight at international forums the importance of facilitating participatory methods of research and extension, farmer and resource user networks and broader participatory development. The question of incentives for cooperation is another issue that could be highlighted.

National level coordination is essential in the implementation of the UNCCD. There is a need to ensure that policies which aim to promote the contribution of local and traditional knowledge are coherent with other social, economic and cross-sectoral policies. Coordinating the work of the conventions at the international level can facilitate their more effective implementation at the national and local levels and avoid duplication of time and effort.

I. INTRODUCTION

1. The purpose of this report is to explore the means of linking work being done by the Committee on Science and Technology of the United Nations Convention to Combat Desertification on traditional knowledge, with similar activity being undertaken under other related conventions. Given the number of international initiatives stemming from the United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992, some level of collaboration is essential. Joint work makes it possible to improve the quality of activities being undertaken, avoid the duplication of efforts, build on what has been learnt and focus on areas where attention is still required. But collaboration, though it saves human and financial resources, also imposes demands on staff and funds. As a result, it is important to clarify, in any particular instance, the goal sought by collaboration, and how best to achieve this. While this report will explore areas for synergy between the international conventions, it is also vitally important to encourage coordination at national level, particularly in the formulation of strategies and action plans. It should be remembered that the ultimate beneficiaries of the UNCCD are intended to be the inhabitants of those areas affected by desertification.

2. Human activities are recognized as a cause of dryland degradation in the definition of desertification provided by article 1 of the United Nations Convention to Combat Desertification. However, human action can also be seen as providing a key to the better management of dryland areas. Actions are shaped by knowledge, experience, incentives and habit, and are by no means unchanging. Traditional knowledge evolves through observation, experimentation and experience, given changing circumstances and opportunities. Thus, approaches to drylands management need to identify ways of building on the knowledge of different stakeholders - farmers, herders, local and national government officials, the private sector, non-governmental organizations, researchers, extension agents, donors, and project staff. The sharing of knowledge from these different sources should aim at a marriage of experience and ideas, which builds on lessons of the past in order to develop better policies and interventions to combat desertification.

3. The report is set out in four main chapters. The first chapter focuses on key concepts and analyses the importance of traditional knowledge. The second discusses the work of the institutions of the United Nations Convention to Combat Desertification, the Convention on Biological Diversity and the Forest Principles. These three agreements were all products of UNCED in 1992 and thus share common objectives. In order to discuss their interrelation, each section begins with a discussion of the main principles and articles and how they might be implemented to promote the knowledge and technologies of traditional and local communities. The third chapter examines other conventions whose terms have an important bearing on the work discussed in the previous section. The new initiatives of the Ramsar Convention on Wetlands are reviewed first. Thereafter, the implications for traditional and local communities of the main international instruments relating

to intellectual property rights are considered, including the FAO farmers' rights initiative.

4. The fourth chapter looks at the UNESCO MOST programme, which seeks to publicize best practices of indigenous knowledge, and UNEP, which is taking important steps to develop synergies between the related conventions. The final chapter draws together the conclusions of the report and puts forward some recommendations to the UNCCD.

A. Key concepts

5. Before beginning the substance of this report, it is sensible to outline the key concepts used, although it may be difficult to give precise definitions of some of the complex issues involved.

6. The word "traditional", when taken to describe the knowledge systems of local communities, implies a contrast with modern systems, but this should not mean that such knowledge is backward, or inappropriate. In this report, and in all of the texts quoted, the knowledge and technologies that may be considered "traditional" are those which are adopted in accordance with customary rules, institutions and practices such as spoken transmission[1]. As Dutfield (1999) points out, local people develop, through continuous experimentation and observation, their own methods which are attuned to their needs, environmental conditions and other socio-economic factors. Thus, there is no contradiction in speaking of "traditional innovation". For example, the *zai* of northern Burkina Faso represent a soil and water conservation method which has evolved to suit the increased urgency of capturing limited rainfall, and maximize use of limited supplies of manure (Reij et al, 1996). Methods of conservation tillage, which are currently widely promoted as a sensible method of managing fragile or less fertile soils, are essentially based on traditional methods (Hagmann and Murwira, 1996). Tightly woven rope baskets used in parts of India can keep rice free from rats for up to five years, unlike the plastic alternatives which can now be seen in many areas (Jewitt, 1999). Indeed, given the well publicized contribution of traditional knowledge to environmental management, such know-how and technology are now widely recognized as forming part of the body of science.

7. Certain characteristics tend to distinguish western or modern science from traditional knowledge. In the main, traditional knowledge is acquired through observation and "hands-on" experience or through personal reporting and a mix of trial and error (Scoones and Thompson, 1994). Often natural resources, such as land, are seen as part of the spiritual world, which needs to be placated through ritual offerings. Traditional approaches tend towards the holistic and qualitative, in contrast to the quantitative methods of Western science. In rural areas, the

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[1] A similar caveat must be placed on the word "customary". Much literature can be cited to show that customary indigenous laws and institutions evolve and are adjusted to reflect realities perceived by members of the community (see Lavigne Delville, 1999).

resource users are themselves the researchers, which allows an appreciation of many locally specific factors in assessing the viability of a particular technology or new practice[2]. This adaptability or flexibility is useful, given the variability associated with dryland ecosystems. For example, indigenous soil and water conservation measures tend to be iterative in approach, which spreads labour requirements for construction and maintenance, in contrast to a single major investment of capital and labour at the start, which is necessary for most introduced techniques (Reij et al., 1996).

8. The approach of the UNCCD in addressing traditional and local technologies does not necessarily imply a concern solely with the purely technical aspects of such knowledge. Traditional environmental knowledge and practices are often inextricably integrated with socio-economic, institutional and cultural values, which should not be overlooked. Indeed, divorcing the socio-cultural values linked with a practice can significantly devalue it in the eyes of the local people. Thus, for example, project interventions should be selected with care, to avoid sacred burial grounds and other sites. At the same time, it makes sense to work with and build on existing social structures, rather than assuming the need to establish new institutional forms. For this reason as well as many others, it is essential that resource users are involved in the process of development and research for it to be sensitive to those wider concerns of local people.

9. Outside observers often assume that traditional knowledge is vested in the broader community, in a general sense. Though this may be the case in some areas, elsewhere knowledge holders may be clearly identifiable individuals or groups within communities. Particularly in the case of medical knowledge, secrets may be held by "wise women" or "wise men" and passed on through restricted channels (Dutfield, 1999). It is important to involve such individuals, since ignoring their concerns can be counterproductive. Agricultural knowledge tends to be much more widely spread than medical wisdom, due to its greater visibility and more tangible qualities. Nevertheless, it has been observed that farmers often do not stray into the fields of their neighbours to observe what they are doing there, for fear of accusations of mischief-making. Even where knowledge is shared amongst all members of a community, opinions regarding that knowledge are not universally held. For this reason, it is important to ensure that community-level activities systematically involve all stakeholders.

10. A number of writers note the difference between what may be termed "technology" as opposed to "practice", and what constitutes "knowledge" as opposed to "know-how". However, for the purposes of this report, the terms are used here interchangeably.

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[2] It is commonly assumed that traditional knowledge is conceived by local groups as context bound or specific to local conditions. However, Fairhead and Leach (1994) demonstrate that rural people do theorize about agro-ecosystem processes and dynamics.

B. Why is traditional knowledge important?

11. The provisions of the UNCCD recognize "traditional and local knowledge" as part of the range of technologies and techniques which could be harnessed to manage dryland ecosystems in a more sustainable way. The benefits of such knowledge relate to identification of useful farm practices, plant and animal species, and forms of social organization which function well in a particular agro-ecosystem. Farmers understand many aspects of soil, water, plants and other living organisms and apply them in combination with ecological processes. In many parts of Africa, for example, knowledge of plant succession is used to assess the condition of rangelands and to regulate grazing intensity. Equally, many farmers are well aware that the appearance of certain plants on their land provides a warning that soils are becoming exhausted. Such knowledge can supplement scientific analyses and extension advice by offering valuable insights into the complex interactions within natural systems. However, farmer knowledge is by no means perfect. In particular, there are frequently shortcomings in their understanding of below-ground, or microscopic processes, or those which take place sufficiently slowly for them to be less clearly apparent. It is for this reason that in Australia, the Landcare approach has encouraged use of aerial photography to help farmers understand broader patterns of land degradation which are not so apparent when standing on the ground. Equally, farmer field schools have aimed to give farmers a better grasp of those factors which they are less able to monitor without proper equipment.

12. One indirect, but extremely important, benefit to be gained from placing increased value on the cultures and knowledge of local communities and recognizing their stake in these resources is the greater incentive for conservation which this should bring. Much of the world's crop diversity is in the custody of farmers. Such diversity is of great local benefit to diets, income generation, stability of output, risk minimization, insect and disease resistance, more effective use of labour, and maximization of returns under low levels of technology. But this diversity also consitutes a global asset of very great significance with many, as yet unknown, benefits.

13. Finally, the strengths of traditional know-how are not limited to the tangible. Supporting and developing traditional knowledge, and the institutions and values linked to them, are essential building blocks for a process of community empowerment.

II. THE RIO AGREEMENTS

14. In order to discuss the synergies between the institutions and international organizations which implement the conventions, it is necessary to establish the common ground between the provisions and objectives of these international instruments. In the following sections, we examine first the provisions of the related conventions which are relevant in this field and then the programmes of work of the secretariats and other convention institutions which are important to the

protection and promotion of traditional knowledge. At the close of each section, some points of guidance and recommendation are suggested.

A. United Nations Convention to Combat Desertification

15. The aim of the Convention is not simply to combat desertification but to work for sustainable development and improved living conditions of the people who depend on affected dryland areas (art. 2). The primary obligations of the Parties to the UNCCD relating to traditional knowledge are found in three articles within the text. The most detailed provisions are set out in paragraph 2 of article 18 on transfer, acquisition, adaptation and development of technology (see box 1). Others relate to the collection, analysis and exchange of information (art. 16) and research and development (art. 17).

Box 1: United Nations Convention to Combat Desertification, article 18.2

The Parties shall, according to their respective capabilities, and subject to their respective national legislation and/or policies, protect, promote and use in particular relevant traditional and local technology, knowledge, know-how and practices and, to that end, they undertake to:

(a) make inventories of such technology, knowledge, know-how and practices and their potential uses with the participation of local populations, and disseminate such information, where appropriate, in cooperation with relevant intergovernmental and non-governmental organizations;

(b) ensure that such technology, knowledge, know-how and practices are adequately protected and that local populations benefit directly, on an equitable basis and as mutually agreed, from any commercial utilization of them or from any technological development derived therefrom;

(c) encourage and actively support the improvement and dissemination of such technology, knowledge, know-how and practices or of the development of new technology based on them; and

(d) facilitate, as appropriate, the adaptation of such technology, knowledge, know-how and practices to wide use and integrate them with modern technology, as appropriate.

16. Thus, the Convention sets out four specific activities which Parties are called on to implement according to their respective capacities, and subject to national legislation and policies. The first of these is the obligation to collect information on traditional and local knowledge and techniques, with the participation of the knowledge holders and, more broadly[1], local populations. Here, echoing article 18.2 as a whole, attention is drawn particularly to the potential use of such know-how. Any such inventories which aim to record traditional knowledge should therefore also present the environmental, socio-economic and cultural context, as these factors may have an important bearing on the replicability of the practices described. As well as a clear exposition of the

[1] See also UNCCD, article 17.1(c).

research methodology[4], reports should also identify the organizations and persons involved in researching and supporting the know-how of rural communities, in order to ensure proper coordination at the various national levels. The UNCCD makes no mention of where such information might be stored. However, safeguarding information in remote databases may not be very productive as they cannot easily be updated and cannot contain a sufficient level of detail to reflect the local specificity of the techniques in question. Furthermore, technologies change continuously through the adaptive and flexible practices of local people. Thus, there is only a limited need to obtain archival documentation and this might be better sourced in local databases. Reports gathered by the secretariat and the experience of the MOST database described in chapter IV.A could prepare the way for an informed debate on the merit of establishing and maintaining such databases, the expenses involved and their overall utility.

17. It is also important to identify for whom the information is intended. In regard to the collection, analysis and exchange of information, article 16(b) calls for this to "address the needs of local communities and... decision makers". These needs are different, however, and different types of information resources are needed. For example, while some local people might benefit from recourse to very detailed information on a particular technique, decision makers might require more general information about how best to incorporate local ideas into development programmes. The second obligation of the Parties is to develop adequate measures for the protection of traditional knowledge[5]. As article 18.2(a) is partly concerned with the protection of knowledge from disappearance, we will discuss this with reference to protection from exploitation by others. Such protection need not be through national legislation. A mutually agreed contract between providers and developers may be a more effective device where foreign companies are involved, as long as ways can be found to bolster the bargaining power and negotiating skills of traditional communities (see Glowka, 1998). The UNCCD also goes beyond the requirement to ensure that communities are not impoverished by the sharing of their knowledge. Where financial benefits accrue to those who disseminate or develop the information commercially, a share of the profits or an acceptable equivalent should accrue directly to the originator of that knowledge.

18. Striving to protect knowledge should not prevent access to it completely, particularly if such knowledge can lead to the development of better and more appropriate ways of coping with desertification. The purpose is rather to prevent exploitation to the unfair advantage of traditional knowledge holders. The issues relating to the equitable sharing of benefits are discussed in section B below.

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[4] In particular, sharing should not become stealing (see Critchley, 1999). The International Society for Ethnobiology recently drafted a set of Guidelines for Research Collections, Databases and Publications.

[5] See also UNCCD, article 16(g), which seeks to ensure "adequate protection... and appropriate returns... on an equitable basis and on mutually agreed terms" for traditional knowledge in the collection and exchange of information.

19. The third obligation recognizes that local people may lack access to information sources beyond their traditional channels. This lack of access is often a more significant reason for the slow pace of technical advance of traditional knowledge than any supposed lack of interest in change. Parties are called on to support communication of knowledge (see also article 16(g)). This can be achieved through documentation as discussed above. However, at least as important is the promotion of networking amongst farmers, forest users, herders, traditional healers etc., in order to foster the spread of ideas, tips and successful practices. In this way, information is communicated through direct experience - farmers speaking to and questioning other farmers from similar communities, in their own language and phrases. Similarly, support to farmer-managed demonstration plots enables farmers to see with their own eyes the practical implementation of proposed methods and results (see for example, Hassan, 1996).

20. The fourth obligation of article 18.2 refers to the potential partnership between rural people's knowledge and formal knowledge. Not all rural practices and technologies are perfect. Many are extremely laborious and backbreaking and some can involve environmental destruction, such as deforestation for fuelwood or extensive land clearance. The potential for adapting these techniques and integrating them into introduced methods may be substantial, as can be seen from work in soil fertility management (Defoer et al., 1999) and farmer field schools (Scoones and Toulmin, 1999). This raises the challenge of building more effective partnerships between communities, researchers and extension agents. The UNCCD seeks to take up that challenge, firstly, through support for capacity-building and training of extension and other professional researchers to raise awareness of the need to move away from old style teaching methods towards facilitation of learning and interactive exchange (art. 19.1(c) and (h)). Secondly, it encourages participation of local people in the research process (art. 17.1(b) and (c)). The change in mentality which is needed to bring about a true partnership between the formally educated and the informally educated, may be easier to propose than to achieve.

21. However integration of traditional and modern knowledge is not only about encouraging collaboration of knowledge holders and decision makers. New technologies are not adopted or developed in a vacuum. People need to have a certain amount of income and tenure security to be able to think about undertaking new capital investments. The returns on these investments also need to be attractive and therefore price levels and market access (in terms of both infrastructure and transaction costs) cannot be overlooked. Article 18.1 addresses some of these points by calling on countries to "take appropriate measures to create domestic market conditions and incentives... conducive to the development [and] transfer... of suitable technology [and] knowledge". The issue of tenure security is also touched upon in the regional annex for Africa (arts. 4.2(b) and 8.3(c)(iii)).

1. National action programmes

22. Parties to the Convention are committed to develop a national action programme to incorporate long-term strategies to combat desertification (arts. 9 and 10). Where possible, the national UNCCD agenda should be integrated within any existing environmental plans or conservation strategies. The NAP is meant to follow a process-oriented, bottom-up approach, which should build on local level development activities to preserve and/or restore the resource base and improve the livelihood security of affected populations. Increased flexibility in project design, funding and implementation is required by article 13, in keeping with the experimental, interactive approach indicated for participatory action at the local community level.

23. The Office to Combat Desertification and Drought reviewed the experiences of the NAP process in a number of countries, particularly in Africa, and found that although many are at the initial phase, substantial progress has been achieved. With respect to effective stakeholder participation, it noted that this was difficult to achieve in some countries due to logistic constraints, such as language barriers, and travelling distances. They also warned that the traditional knowledge of women, in particular, was generally excluded, and would continue to be sidelined unless recognition of women's specific roles and responsibilities in management of resources and drylands became an integral feature of the NAP process (UNSO, 1998).

2. The COP and the CST

24. The commitments contained in the UNCCD were taken up by the Conference of the Parties at its first session (COP 1), which encouraged the Parties and observers to collate information on the use of traditional and local technology, etc[6]. In response, information was submitted by 12 Parties and 5 observers to the secretariat, which subsequently compiled a summary outlining the variety of techniques identified by the individual reports. The main techniques reported related to: control of wind and water erosion, water conservation, improvement of soil fertility, plant protection, forestry, social structures, housing and architecture. The synopsis was presented to the Committee on Science and Technology at the second session of the COP in December 1998. Among the issues highlighted for attention were the legal implications of intellectual property rights, ways of harnessing the positive attributes of traditional knowledge and the greater inclusion of traditional communities in the preparatory stages of national action programmes. The Committee, recognizing the role of women in food production and the management of natural resources, also discussed the importance of including women in indigenous knowledge networks and the need for gender-sensitive policies and programming.

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[6] Decision 20/COP.1.

25. Also at COP 2, the secretariat was requested to complete its ongoing work on compiling the regional and subregional reports[7] on the most important and widely applied examples of traditional knowledge. The Conference also requested the secretariat to prepare a report on traditional knowledge in dryland ecosystems, drawing on the discussions that took place at the second session of the Committee and the synthesis report. The present report was commissioned as a follow-up to decision 14/COP.2.

26. An ad hoc panel of 10 experts was appointed to assist the CST. The two reports referred to above were presented to the first meeting of this panel in mid-July. Drawing upon the secretariat's synthesis of traditional technologies for dryland management, the panel was charged with identifying successful experiences and drawing conclusions related to threats and other constraints. The threats identified by the CST were encroachment by inappropriate modern technologies and pest invasions, biodiversity loss and climate change as well as population dynamics, the marginalization of women and widespread poverty. Specific case histories for integrating traditional and local knowledge into modern knowledge were also discussed by the panel, based on specific case histories; and mechanisms for promoting and exchanging successful approaches. The conclusions and recommendations of this panel will be communicated to the COP at its third session.

3. Guidance and recommendations

27. The concern of UNCCD with promoting, protecting and using traditional and local knowledge seemed to be little known to many of the people contacted in the preparation of this report. The ongoing information-gathering exercise of the secretariat on compiling regional and subregional reports on widely applied traditional knowledge, generated interest amongst the other secretariats, in particular the CBD. It would seem worthwhile, therefore, to circulate more information about such initiatives amongst other organizations that are currently proposing to undertake similar exercises.

28. It might also be worth undertaking a joint reflection with other convention secretariats regarding the utility of further inventories of indigenous ecological and technical knowledge. It might be useful to move from a listing of technologies towards indentifying how these can provide the basis for more effective action in partnership with local people. The approach of the UNESCO/CIRAN database described below could be particularly instructive in this regard. What is important therefore is less the technical aspects and dimensions, and more the broader facilitating environment which can ensure that local ideas are respected and the valuable skills of local people harnessed.

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[7] Decision 14/COP.2.

B. Convention on Biological Diversity

29. The Convention on Biological Diversity was the first international treaty to acknowledge the vital role of traditional knowledge, innovations and practices in environmental conservation and sustainable development, as well as the need to guarantee their protection whether through intellectual property rights protection or other means. The Convention was adopted at UNCED in 1992 and, in common with the UNCCD, upholds the principles of Agenda 21 and the Rio Declaration. The three overall objectives of the CBD are: the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. It is useful to point out also that, whereas the UNCCD refers to affected dryland countries and has a particular focus on Africa, the CBD may apply all over the world. However, the CBD is currently developing an "ecosystem approach" which will focus discussions on systems such as forests, inland waters, marine and coastal areas etc. The next COP in May 2000 will concentrate its efforts on biodiversity in dryland environments.

30. The conservation of livestock and plant diversity is complementary to the goal of countering land degradation[8]. Crop diversity can be harnessed to maintain soil structure and fertility, provide some protection against risk and prevent pest damage. Herd diversity allows several species with different dietary preferences to forage efficiently in the same range, as well as constituting a well-tested risk-diversification strategy. Indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biodiversity are seen as important actors in the implementation of the CBD and many indigenous groups are represented at the meetings of the Convention as observers or are included in national delegations.

31. The main obligations under the Convention concerning knowledge, innovations and practices of indigenous and local communities are contained among the provisions for *in situ* conservation. In the main, they are very similar to article 18.2 of the UNCCD, though their focus is on biodiversity conservation[9]. The Parties are called on wherever possible to respect, preserve, maintain and promote such knowledge and practices (see box 2), with the approval and involvement of the people concerned and to encourage the equitable sharing of benefits. The COP has expressly acknowledged the need to recognize traditional knowledge as being of similar importance to high-tech science[10] and worthy of respect. The Convention does not elaborate on how this knowledge should be preserved, maintained or promoted.

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[8] For a review of the scientific and technical linkages between issues addressed by the desertification and biodiversity conventions, see "Synergies in national implementation of the Rio agreements", UNDP, August 1998.

[9] It should be remembered that the CBD was adopted two years earlier and therefore the Intergovernmental Negotiating Committee undoubtedly took these into consideration when formulating the UNCCD.

[10] See preamble to decision III/14 of the Conference of the Parties to the CBD.

Box 2: Convention on Biological Diversity, article 8(j)

(bullet points added)

Each Contracting Party shall, as far as possible and as appropriate ...

- Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity;
- Promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices; and
- Encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

32. Several other provisions of the Convention are also relevant to this discussion[11]. Article 10(c) for example, seeks to protect and encourage customary use of biological resources in accordance with ecologically sound traditional cultural practices. As with the UNCCD, the exchange of information on indigenous and traditional knowledge as such and in combination with other technologies is also highlighted (CBD art. 17.2) and Parties are required to encourage and develop methods of scientific and technical cooperation for the development of traditional technologies (CBD art. 18.4).

33. The provisions of the CBD must be seen against the background of the substantial commercial interest in the chemical and genetic aspects of biological diversity. However, biodiversity is not solely the preserve of the humid tropics. Dryland areas are home to a wealth of plant and animal species, many of which are, and have been, commercially important for agriculture, the pharmaceutical industry and tourism. Successful exploitation of genetic resources can be very profitable but the risks are also high. Much of the world's biodiversity is found in rural areas of developing countries. Furthermore, much of the knowledge which is used to identify the potential beneficial properties of little known species is in the hands of traditional communities. However, in the past, developing countries received few of the benefits from "bioprospecting", while successful companies in developed countries benefited greatly (see Swiderska, 1999). This background of concern about the risks of exploitation has led to emphasis throughout the CBD text on the "equitable sharing of benefits" (see art. 8(j) above). Many provisions of the CBD concern access to genetic resources and fair access to any technology derived from them, whether or not these are covered by patents, etc. (arts. 15.7, 16.3 and 19.2). To this end, the CBD expressly requires "prior informed consent" before a contract to provide genetic resources can be validly executed. This is important in that it places a burden on prospecting companies to explain their actions and motives before attempting to secure agreement on "mutually agreed terms"[12].

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[11] For the CBD secretariat's interpretation of these terms and their interrelation, see UNEP/CBD/TKBD/1/2.

[12] CBD art. 15.4 and 15.5.

34. As the ownership of such resources is claimed by the State (art. 3), however, the agreement and consent discussed above are the prerogatives of the government. This contrasts with the UNCCD which holds that "owners of that knowledge will directly benefit on an equitable basis and on mutually agreed terms" (UNCCD art. 17.1(c)). Nonetheless, "approval and involvement" of local people is required under article 8(j) of the CBD, as far as indigenous knowledge, innovations and practices is concerned[13]. Several interesting pilot projects are currently being carried out to set up information directories that take account of the rights and concerns of traditional and local peoples. See, for example, the People's Biodiversity Register in India (Amruth, 1996) and the Geographical Information Systems database in construction in New Zealand (Harmsworth, 1998).

35. Parties to the CBD are also required to legislate and pursue policies to share fairly the results of research and development and the benefits arising from commercial and other utilization of genetic resources (art. 15.7). Article 17.2 calls for the repatriation of information, which can be very important in the effort to regenerate some of the knowledge lost in the decades of "modernization" and rekindle enthusiasm and pride in traditional knowledge.

36. The provisions of the CBD relating to indigenous and local communities are reflected in many other texts and policies.

1. National biodiversity strategy and action programmes

37. As with the UNCCD, a major part of the CBD agenda is meant to be carried out at the national and local levels. One important obligation of the Parties is the development of national biodiversity strategy and action plans, though, in contrast to the UNCCD, little guidance on these plans is provided in the text of the Convention. UNEP is supporting the preparation of several such plans, with Global Environment Facility (GEF) funding. Article 6(a) recommends adapting existing strategies, plans or programmes, so as not to duplicate planning instruments unnecessarily. However, there is no central repository of national BSAPs, making it difficult for the secretariat to examine the extent to which they incorporate cross-sectional environmental issues and are integrated into existing strategies. Coordinated planning at the national level is important in terms of minimizing the time spent in consultation of the same groups for similar purposes. A recent UNSO report on the NAP process under the UNCCD noted that, in several countries, "local communities feel overloaded with consultations for various development programmes" (UNSO, 1998).

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[13] See document UNEP/CBD/TKBD/1/2.

2. The COP and the SBSTTA

38. The programme of work for implementation of the CBD, as with the UNCCD, is governed by the Conference of the Parties, assisted by the Subsidiary Body on Scientific, Technical and Technological Advice and serviced by a secretariat. Following an initiative of COP 2, the secretariat appointed a programme officer on traditional knowledge in 1996 to work full-time on issues of implementation of article 8(j) and related provisions and the integration of traditional and local knowledge into the other thematic areas developed under the Convention, such as agricultural biodiversity (see below), forest biodiversity, biodiversity of inland waters and incentive measures. The programme officer is the main point of contact for indigenous and community groups wishing to find out more about the Convention and its programme of work and also to make their views heard within the secretariat. As of June 1999, however, this position is vacant and no successor has yet been appointed.

39. An important early initiative of the CBD was to set up the clearing-house mechanism (CHM), which aims to promote technical and scientific cooperation at all levels among parties to the CBD through facilitating access to information. The clearing-house depends on a decentralized process to gather and organize the information needed by its users. Driving this process are the networks of focal points - national and international institutions. These centres coordinate initiatives on topics of common interest, encourage networking among government agencies, expert groups, non-governmental organizations and private enterprise at all levels. Each focal point also contributes to the clearing-house information system, which is accessible via the Internet[14]. The CHM works with the Biodiversity Information Network, actively promoting synergies between conventions. An Indigenous Peoples Biodiversity Information Network has also been set up with the aim of assisting indigenous peoples to lobby for the implementation of article 8(j). It is currently in a pilot phase and seeks to support existing networks and broaden access to information on the CBD and related processes.

The Madrid workshop

40. At its third session, the COP called on those Parties that had not yet done so to develop national legislation and corresponding strategies for the implementation of article 8(j) in consultation, particularly, with representatives of their indigenous and local communities[15]. Following the interest expressed at COP 3, the secretariat produced a report which considered the linkages between

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[14] For those without Internet access, printouts, leaflets and CD-ROMs are available.

[15] Decision III/14, paragraph 1. Note that integrating knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles within modern management practices was a focus of the CBD even before its first Intergovernmental Committee. See the report of the Open-ended Intergovernmental Meeting of Scientific Experts on Biological Diversity, Mexico, April 1994 (UNEP/CBD/IC/2/11, esp. annex VII but also annexes II, III, V and IX).

article 8(j) and related issues and provided some elaboration of the concepts underlying its key terms[16]. The report also provided a survey of activities undertaken by other organizations[17] and their possible contribution to the work of the Convention on article 8(j).

41. Towards the end of 1997, a workshop on traditional knowledge and biodiversity was held in Madrid, for which case studies were invited. In response, 44 submissions were received from Parties, though only 10 countries were involved. Submissions were also received from 22 indigenous and local communities and 8 non-governmental organizations and other organizations. The workshop itself was well attended, with representatives of 62 governments and 148 indigenous and local community groups and non-governmental organizations present. The reports of the two working groups provided advice to the COP on developing a workplace with respect to traditional knowledge issues and proposed a working group or a subsidiary body to consider the means of implementing article 8(j) and related provisions.

A new working group

42. Taking up the momentum created by the workshop, the Conference of the Parties at its fourth session recognized that traditional knowledge should be given the same respect as any other form of knowledge in the implementation of the Convention. The need for sustained dialogue with the representatives of local communities was strongly emphasized. This was reflected in one of the main outcomes of the session relevant to traditional and local knowledge, namely, the decision to set up an ad hoc open-ended inter-sessional working group[18]. The mandate of this working group is outlined in box 3. The group is to be composed of Parties and observers including, in particular, representation from indigenous and local communities. Parties were requested to facilitate this and according to their capabilities to provide support for active participation by indigenous and local communities from their own countries. The first meeting of this working group is scheduled for January 2000.

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[16] UNEP/CBD/TKBD/1/2, 18 October 1997 (see http://www.biodiv.org/indigenous/tkbd-e.htm).

[17] The organizations reviewed were the United Nations High Commissioner for Human Rights, the United Nations Commission on Sustainable Development (including the Intergovernmental Panel on Forests), the International Tropical Timber Organization, UNDP, UNEP, the International Labour Organization, the World Intellectual Property Organization, UNESCO, the World Bank, the Inter-American Development Bank, the Asian Development Bank, the African Development Bank, and the European Bank for Reconstruction and Development, together with some indigenous and non-governmental organizations.

[18] Decision IV/9.

Box 3: Mandate of the ad hoc open-ended working group concerning the implementation of article 8(j)

1. To provide advice as a priority on the application and development of legal and other appropriate forms of protection for the knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity;
2. To provide the Conference of the Parties with advice relating to the implementation of article 8(j) and related provisions, in particular on the development and implementation of a programme of work at national and international levels;
3. To develop a programme of work, based on the structure of the elements in the Madrid workshop report[19];
4. To identify those objectives and activities falling within the scope of the Convention; to recommend priorities taking into account the programme of work of the Conference of the Parties, such as the equitable sharing of benefits; to identify for which work-plan objectives and activities advice should be directed to the Conference of the Parties and which should be directed to the Subsidiary Body on Scientific, Technical and Technological Advice; to recommend which of the work-plan objectives and activities should be referred to other international bodies or processes; to identify opportunities for collaboration and coordination with other international bodies or processes with the aim of fostering synergy and avoiding duplication of work; and
5. To provide advice to the Conference of the Parties on measures to strengthen cooperation at the international level among indigenous and local communities embodying traditional lifestyles relevant to the conservation and sustainable use of biological diversity and make proposals for the strengthening of mechanisms that support such cooperation.

43. Of the short-term activities proposed by COP 4 in preparation for this meeting, the most prominent is the invitation to governments and international agencies, research institutions, and representatives of indigenous and local communities in 135 countries to submit case studies. Guidance for these studies indicates the five areas of concern: the interaction between traditional and other forms of knowledge on biodiversity; the influence of international instruments, intellectual property rights, current law and policies; the extent to which traditional knowledge has been incorporated into development and resource management decision-making processes; ethical guidance for the conduct of research about traditional knowledge; and matters of prior informed consent, fair and equitable sharing of benefits and *in situ* conservation.

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[19] Seven elements were suggested: participatory mechanisms for indigenous and local communities; status and trends in relation to article 8(j) and related provisions; traditional cultural practices for conservation and sustainable use; equitable sharing of benefits; exchange and dissemination of information; monitoring elements; legal elements.

44. Some 20-30 case studies have so far been submitted, and these should appear on the CBD clearing-house mechanism's web site within the next few months. A synthesis report will be prepared by the secretariat in time for the January 2000 working group meeting.

45. Reflecting the concerns expressed by COP 3 that there were "no international legal instruments or standards which adequately recognized indigenous and local communities' rights over their knowledge, innovations or practices"[20], the programme officer of the CBD secretariat has also been working on a review of legal frameworks for protecting traditional knowledge. This report should also be available in mid-August and will be posted on the CBD web pages. The secretariat's input to the programme of work has now been prepared and will be published prior to the meeting of the working group.

Agricultural biodiversity

46. The work of the CBD on thematic areas such as traditional and local knowledge is coordinated with other main thematic areas of work under the Convention. Perhaps the most relevant to the overall work of the UNCCD is that of agricultural biodiversity[21]. The term encompasses "the variety and variability of animals, plants and micro-organisms which are necessary to sustain key functions of the agro-ecosystem, its structure and processes for, and in support of food production and food security"[22]. Work in this sector is undertaken in close collaboration with FAO and an FAO officer has been seconded to the CBD secretariat to oversee activities in this regard. A joint FAO and CBD workshop on sustaining agro-biodiversity, held in Rome, December 1998[23], recognized the knowledge, innovations and practices of local farmers, herders and fishermen, as essential for the conservation and sustainable use of agricultural biodiversity, and highlighted the need for improved south-south exchanges of electronic information.

3. Guidance and recommendations

47. The CBD has continued to give high priority to the concerns of traditional and local knowledge holders throughout the discussions of the Conference of the Parties and SBSTTA meetings. The new initiatives under way represent good opportunities for sharing of information on traditional and local knowledge at the international policy level and exchange of national and local level experience.

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[20] "Knowledge, innovations and practices of indigenous and local communities" (UNEP/CBD/COP/3/19).

[21] See also forest biodiversity and inland water biodiversity and incentive measures.

[22] Definition developed by the international technical workshop on sustaining agricultural biodiversity and agro-ecosystem functions, organized jointly by FAO and the CBD secretariat with the support of the Government of the Netherlands, Rome, December 1998.

[23] See report of the international technical workshop on www.biodiv.org/agro/meetings/report-Dec98.html.

48. The working group meeting to be held in January 2000 will provide not only a forum for consideration of the CBD programme of work in this field, but would also be a useful meeting-place for national delegations and local community representatives. All the organizations contacted in the preparation of this report indicated their interest in attending. The UNCCD could usefully participate in this meeting, outlining their particular interest in indigenous technical knowledge and biodiversity within dryland areas, to identify areas of synergy.

49. Another point to signal is that a further round of case studies has been requested from Parties but few have so far been submitted. It would be wise to refrain from calling for more case studies on related subjects, without a proper examination of the value of these previous exercises (see also that of the IUCN Social Policy Group for the Ramsar Convention described below).

50. The fact that there is no-one currently in position in the CBD with whom the UNCCD could coordinate efforts is unfortunate. The UNCCD secretariat will need to make sure that it is aware of when the replacement is made so that it is kept informed about the preparations for the January meeting and can signify its interest in collaborating.

51. As concerns the national action strategies, there are signs that integration is taking place at the national level (UNSO, 1998). Clearly this is an area in which collaboration would be of great benefit. A multiplicity of plans with room for possible conflict is of little practical benefit. Encouraging the location of units dealing with desertification, biodiversity, forests and wetlands in the same department within a single ministry could pave the way to greater coordination, not just of logistical preparations for planning but of ideas arising from the stakeholders involved in the different conventions. The possibility of commissioning pilot studies to examine how countries are attempting to coordinate the related agendas could be of benefit.

C. Forest Principles

52. The Forest Principles adopted at UNCED share many of the same approaches as the CBD and the UNCCD relating to sustainable participatory development. Though the principles have not been incorporated into a formal convention, they nevertheless represent an important statement at the international level. The first of these principles recognizes the multiple uses of forest products and services.

53. Principle 12d provides that "appropriate indigenous capacity and local knowledge regarding the conservation and sustainable development of forests should, through institutional and financial support and in collaboration with the people in the local communities concerned, be recognized, respected, recorded, developed and, as appropriate, introduced in the implementation of programmes".

54. Principle 2d urges governments to promote opportunities for the participation of local communities, including forest dwellers, non-governmental organizations and women. Perhaps most significant is principle 5, which states that national forest policies should recognize and duly support the identity, culture and rights of indigenous people, their communities and other communities and forest dwellers. It goes on to recognize the need for local communities to have an economic stake in forest use and that this might be achieved by strengthening the rights they can claim over these resources.

55. These principles are often criticized for their lack of coherence and "internal logic" (Posey, 1996). However, they remain the main agreed statement of international policy on forests.

1. The forum and the task force

56. Following the establishment of the ad hoc Intergovernmental Panel on Forests in 1995, an informal Inter-Agency Task Force on Forests was set up in Geneva to coordinate the inputs of international organizations to the forest policy process[24]. Within this task force, the CBD is the lead agency in relation to issues of traditional forest-related knowledge. At the conclusion of the IPF in 1997, it was decided to continue the intergovernmental policy dialogue on forests, and consequently the ad hoc open-ended Intergovernmental Forum on Forests was set up within the Commission on Sustainable Development. This Forum will run at least until 2000, and is serviced by a secretariat which depends entirely on voluntary financial contributions and mainly on staff seconded from the Task Force[25]. The final report of the IPF emphasized the need for further research and discussions on the role of traditional forest-related knowledge in the conservation of biodiversity and sustainable forest management.

57. During its third meeting in Geneva, in May 1999, the IFF called upon countries to implement measures for greater recognition, respect and protection of traditional forest-related knowledge, taking account of the work being advanced by the CBD, the working group meeting scheduled for January 2000 and the development of a forest biodiversity work programme[26].

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[24] The members of the ITFF include: the Centre for International Forestry Research (CIFOR); FAO; the International Tropical Timber Organization (ITTO); the CBD secretariat; the United Nations Department of Economic and Social Affairs; UNDP; UNEP; and the World Bank.

[25] FAO, ITTO, UNDP, UNEP and the United Nations Department of Economic and Social Affairs have each loaned one senior expert to the secretariat.

[26] For a detailed summary of the recommendations of the forest biodiversity programme of work, see "Programme element II.d (2). Issues needing further clarification: traditional forest-related knowledge. Secretary-General's report (E/CN.17/IFF/1999/8).

58. The IFF has invited the CBD secretariat in collaboration with CIFOR, FAO and others to prepare an overview of the possible approaches to identify, collect, and record traditional forest-related knowledge in consultation and cooperation with the knowledge holders. Finally, the IFF also proposed the development, at national level, of legislation and policies to achieve the objectives of articles 8(j), 15, 16, and 19 of the CBD, relating to the equitable sharing of benefits.

2. Guidelines and recommendations

59. The attention of the IFF has turned more recently to the importance of dryland forests, major rainforest regions of the world having tended to dominate earlier discussions. The UNCCD should keep the IFF informed of any initiatives it is taking in relation to traditional forest-related knowledge in dryland areas. Greater cooperation with the CBD, as discussed in the previous section, should encompass cooperation with the Inter-Agency Task Force on Forests, in view of the leading role of the CBD on this issue.

60. There is thus a large area of common ground related to this subject amongst the three environmental agreements which resulted from UNCED. In addition, the United Nations Framework Convention on Climate Change should not be overlooked in this report, although it appears that the question of indigenous knowledge has not been directly taken up by its subsidiary body, the SBSTA. Traditional knowledge can, in fact, provide valuable indicators of climatic variation. For example, the cyclical existence of the El Niño Southern Oscillation and its local consequences were widely known amongst local people along the western seaboard of South America well before the scientific research establishment took an interest and began to discover its global significance.

61. However, the Rio conventions and agreements are not the only international policy instruments relevant to this discussion. Some others are discussed below.

III. OTHER RELEVANT CONVENTIONS

A. Ramsar Convention on Wetlands

62. The Ramsar Convention on Wetlands was signed in 1971 and concerns the conservation and "wise use" of wetlands. The text drafted in the 1960s "largely reflects the conservation ethics of that era" (Finlayson, 1999) and it is not at all clear, from the text, how such conservation and wise use might best be achieved. However, the Convention has responded to the broad changes in views on environmental management over the last 20 years, as demonstrated by the recently adopted *Guidelines on involvement of local people* (see below). The definition of "wise use" was agreed in 1987 as the "sustainable utilization of wetlands for the benefit of humankind in a way compatible with the maintenance of the natural properties of the ecosystem". In contrast to the later conventions described above, the Ramsar Convention does not extend express protection to traditional or local knowledge.

63. Wetlands are extremely important to the livelihoods of inhabitants of arid areas around the world[27]. The *bas fonds*, flood plains and lakes of the world's drylands are critical for sustaining human populations. Such resources can provide water for irrigation, livestock, fishing and domestic consumption. Wetland areas also support significant numbers of wildlife and bird species which can be important for tourism and for broader ecosystem management and biodiversity in dryland countries (see Kingsford, 1997 for a comparison with the UNCCD).

1. The COP and the STRP

64. The Ramsar Convention is governed by a Conference of the Parties, assisted by a Scientific and Technical Review Panel and is serviced by a small Bureau hosted by IUCN. In 1990, the COP established guidelines for the implementation of the "wise use" concept. These included provision for the establishment, implementation and periodic revision of management plans "which involve local people and take account of their requirements". Despite this, the subject of local participation in wetland management was not a major feature of the work of the Convention until 1996, when it was the focus of a technical session of COP 6 on community involvement. At this meeting, the Ramsar Convention Parties and its Bureau were recommended "to make specific efforts to encourage active and informed participation of local and indigenous people at Ramsar listed sites and other wetlands and their catchments and their direct involvement through appropriate mechanisms, in wetland management"[28].

Case studies and the new guidelines

65. A project set up by the IUCN Social Policy Group began in May 1997 with three workshops to plan work on the guidelines for the involvement of local people. Twenty-one case studies were selected covering areas from each of the seven Ramsar Convention regions representing a variety of wetland ecosystem types, conservation issues and forms of local involvement. Some of these were in dryland areas relevant to the UNCCD. From the case study material, the Group synthesized the lessons learned and formulated policy recommendations to produce a first draft of guidelines for local people's involvement in wetlands management.

66. They concluded that incentives for local involvement and wise use are essential: everyone must benefit in the long term. The guidelines recognize that there are various benefits which local people may derive from participatory management arrangements. These include, as well as progress towards sustainable incomes and livelihoods, the maintenance of spiritual and cultural values associated with a wetland, more equitable access to wetland resources, increased local

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[27] Aridity does not preclude wetlands or rivers. There are many thousands of wetland areas distributed throughout the world's arid zones (see Kingsford, 1998 at http://www.ramsar.org/ about_arid.htm).

[28] Recommendation 6.3.

empowerment, reduced conflicts among stakeholders, and the maintenance of ecosystem functions such as flood control and improved water quality. Government agencies, for their part, may benefit from participatory management arrangements through "improved ecosystem viability, reduced management costs, assistance with monitoring and surveillance, fewer infringements and enhanced social sustainability"[29].

67. Trust among stakeholders was also recognized as essential for agreement to be reached and adhered to, but trust takes time to develop. Recognizing that no one approach to participation will fit all contexts, flexibility is called for along with an ongoing reflection on processes and outcomes. A checklist of indicators for measuring the extent of local involvement through incentives, trust building, flexibility, etc. was also developed. Knowledge exchange and capacity-building are also seen as fundamental. The guidelines acknowledge that "local environmental knowledge can make a significant contribution to wetland management strategies, especially when blended with the best available science". Finally, a long-term commitment of resources and effort is also important.

COP 7 and joint work plan with CBD

68. The seventh session of the Ramsar Convention's Conference of the Parties, held in May 1999, had the "vital link between people and wetlands" as its overall theme. The workshop of the STRP (the Convention's equivalent of the CST) met to discuss the involvement of local and indigenous communities in the wise use of wetlands. During these meetings the final text of the guidelines described above was adopted as resolution VII.8. These guidelines represent an important statement of good practice and are a significant step in reflecting the Parties' concern for the participation and involvement of local and indigenous communities.

69. The links between the Ramsar Convention and the CBD are institutionally enshrined in the Memorandum of Cooperation between the two conventions. In view of this, a joint work plan was endorsed by the CBD COP at its fourth session[30] "as a framework for enhanced cooperation" and is being implemented.

2. Guidance and recommendations

70. The Ramsar Convention guidelines on involvement of local people provide useful food for thought. They could provide the basis for any UNCCD guidelines on this matter. As with the other conventions and agreements reviewed above, it is important that all institutions keep abreast of the initiatives and outputs of their counterparts elsewhere, in order to build on what has been learned.

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[29] These guidelines are available on the web at http://www.ramsar.org/key_res_vii.08e.htm.

[30] The UNCCD also signed a Memorandum of Cooperation with the Ramsar Convention at COP 2 in 1998.

B. TRIPS, UPOV and farmers' rights

TRIPS

71. The question of intellectual property rights over traditional knowledge is circumscribed by several international agreements, in particular, the Trade-Related Aspects of Intellectual Property Rights Agreement, which was adopted as an annex to the Uruguay Round of the GATT. This Agreement, signed in 1994, obliges nation states to set up legal regimes to protect the intellectual property rights of innovators, whether national or foreign, for a minimum of 20 years.

72. The regulations adopted in the TRIPs agreement apply the European or United States intellectual property rights model, whereby patent protection may be granted for any process, machine or "composition of nature" which is novel, capable of industrial application and involves an inventive step (thus excluding simple discovery of a naturally occurring process). This regime serves to protect the rights of commercial breeders, biotechnologists and other industrial innovators but is seen as inadequate for the protection of the traditional knowledge of local communities, despite the fact that such knowledge is increasingly the starting point in industrial research of genetic resources. Traditional knowledge rarely qualifies for patent protection, as it does not pass the test of novelty[31]. Even where technologies are relatively recent developments, knowledge held by traditional communities is often held "in the public domain" - that is, it is commonly known or shared amongst a wider group of people. Without legal recognition of the community unit, such groups cannot apply for patent protection. Moreover, where knowledge is individually held, it is highly unlikely that the TRIPs system could benefit these individuals, due to the expense of applying for, monitoring and enforcing patents[32].

Other intellectual property rights regimes

73. The TRIPs agreement sets the minimum standards for patents but allows countries to opt out of these regulations in the case of plant varieties and animal species, as long as they develop their own dedicated (*sui generis*) systems as an alternative means of protection[33]. Three such regimes are relevant to this report. The first is the CBD, which offers protection to knowledge, innovations, and practices, as described above. However, it is possible that such protection may need to be incorporated into national legislation before it can have legal effect. The second regime is that of the conventions of International Union for the

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[31] Vogel (1997) argues that traditional knowledge may qualify for protection as trade secrets.

[32] It has been estimated that the preparation of a patent application in the United States costs around US$ 20,000 (Lesser, 1998).

[33] This provision - Article 27(3)(b) - is to be reviewed later this year and many indigenous groups and non-governmental organizations working with local communities are actively campaigning for its revision (e.g. Third World Network).

Protection of New Varieties of Plants, as modified by the International Undertaking on Plant Genetic Resources (IUPGR) described below. The third could be any national laws which give adequate protection to the intellectual property rights of both foreigners and nationals. Indeed, many local communities possess their own legal systems which deal with the classification of different types of knowledge, procedures for acquiring and sharing knowledge and the rights and responsibilities which attach to possessing knowledge. Customary practices relating to resource use have been recognized by some countries and incorporated into statutory law in various ways, but such recognition is less likely in areas where indigenous and rural communities are marginalized and are poorly represented in national forums. Such has been the situation faced, for example, by many pastoral groups.

74. The first UPOV convention set up a *sui generis* system in 1961 (amended in 1971 and 1978), which granted patent rights over resource use but allowed what became known as a "farmer's privilege" to reuse seed from the new varieties of plant for planting in the following season. This allowed traditional communities the means with which to continue experimenting with production and providing for domestic consumption without infringing the plant breeder's intellectual property rights. However, this was revised, resulting in the 1991 UPOV convention, which withdrew this privilege and restricted all use - commercial or otherwise - of new plant varieties[14]. While plant genetic resources are essential for crop improvement and increased food security, sound policy also needs to consider the overall picture, and in particular, the supply of raw materials. Protection of plant breeders' rights places an annual economic burden on farmers, who are often the original providers of germ plasm to plant breeders.

Farmers' rights

75. The Commission on Genetic Resources for Food and Agriculture (CGRFA) sought to address the disparity which had emerged between plant breeders and farmers. Ten years of debate culminated in the parallel recognition of plant breeders' and farmers' rights by more than 170 countries in a resolution of the 1989 FAO Conference which is now an annex to the International Undertaking on Plant Genetic Resources. These are defined as "rights arising from the past, present and future contribution of farmers in conserving, improving and making available plant genetic resources, particularly those in the centres of origin/diversity. These rights are vested in the international community, as trustees for present and future generations of farmers, for the purpose of ensuring full benefits to farmers and supporting the continuation of their contributions". Note that plant breeders' rights are vested in individuals and companies, whereas farmers' rights are vested in the international community. However it is unlikely that this disparity will be resolved in the negotiations that are to continue later this year. The latest

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[14] Though national laws were entitled to expressly reauthorize the farmers' privilege. Note that the 1991 UPOV convention is not yet in force as it only had 38 signatories, as of January 1999. However, the number is increasing steadily.

negotiating session of the Commission, in April 1999, agreed on a new article 15, "Farmers' rights" (see box 5).

76. The concept of farmers' rights, unanimously adopted at the 1989 FAO Conference, is intended to form the basis of a formal recognition and reward system to encourage and enhance the continued role of farmers and rural communities in the conservation and use of plant genetic resources[35]. A 1991 resolution proposed an international fund to implement farmers' rights on plant genetic resources. The fund has not been successful due to lack of contributions and has been opposed by some indigenous peasant and farmers' groups, who distrust governments' ability to administer funds fairly.

Box 4 - International Undertaking on Plant Genetic Resources, article 15

15.1 The Parties recognize the enormous contribution that the local and indigenous communities and farmers of all regions of the world, particularly those in the centres of origin and crop diversity, have made and will continue to make for the conservation and development of plant genetic resources, which constitute the basis of food and agriculture production throughout the world.

15.2 The Parties agree that the responsibility for realizing farmers' rights, as they relate to plant genetic resources for food and agriculture, rests with national governments. In accordance with their needs and priorities, each Party should, as appropriate, and subject to its national legislation, take measures to protect and promote farmers' rights, including:

- protection of traditional knowledge relevant to plant genetic resources for food and agriculture;
- the right to equitably participate in sharing benefits arising from the utilization of plant genetic resources for food and agriculture;
- the right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture.

15.3 Nothing in this article shall be interpreted to limit any rights that farmers have to save, use, exchange and sell farm-saved seed/propagating material, subject to national law and as appropriate.

[35] In a report of the Secretary-General of the IPF within the special programme element on traditional forest-related knowledge, it is recognized that foresters and farmers can be seen as forming part of the same continuum, as indigenous and local communities frequently integrate forest and agricultural management systems.

1. World Intellectual Property Organization

77. WIPO has a programme on intellectual property rights of "new beneficiaries", including the holders of indigenous knowledge. There are six main activities within the current programme (1998-1999). A public panel discussion was held in December 1998, which took as its basis a collection of expert studies on the legal character of intellectual property rights arising in various multilateral instruments. The panel produced reports on intellectual property topics such as health, competition, trade, and human rights.

78. Another activity was the study of current approaches to the protection of intellectual property rights of holders of indigenous knowledge and dissemination of information. Fact-finding missions were undertaken on "traditional knowledge, innovations and culture of indigenous peoples, local communities and other holders of traditional knowledge and culture" to North, South and Central America, the South Pacific, West, Southern and Eastern Africa and South Asia. Interviews with groups from various countries in Africa were carried out and, in some cases, round-table discussions were established with representatives of institutions and non-governmental organizations from around the country. Many of the concerns raised in these missions related to the protection of musical rights, folklore and traditional medicine, but traditional ecological knowledge was also discussed. UNEP is collaborating with WIPO to study the impact of intellectual property rights systems and traditional knowledge on the conservation and sustainable use of biodiversity and the equitable sharing of benefits derived from it.

79. The CBD COP has encouraged the negotiation of a memorandum of understanding with WIPO to enhance cooperation between the CBD and WIPO on issues arising from article 8(j) and related provisions[36]. The secretariat has been requested to compile case studies relating to existing *sui generis* systems for transmission to WIPO and for use in legislating on implementation of article 8(j) and related provisions.

80. WIPO also provides technical advice, when requested by countries or specialized agencies, and often participates in conferences and seminars to explain the role of WIPO. Mostly, this advice is focused on assisting developing countries to meet their obligations under the TRIPs agreement which, in some cases, must be implemented by 1 January 2000. So far, very few countries have requested advice on the protection of traditional knowledge[37].

81. Another planned activity is the commissioning of a feasibility study on establishing a database on traditional knowledge. Pilot projects are planned to test new approaches to the use of the intellectual property system.

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[36] Decision IV/9.

[37] The list of countries in discussion with WIPO is confidential but will be disclosed in the report at the end of the biennium.

82. Finally, WIPO also set up a round-table on intellectual property and indigenous peoples in connection with the United Nations Working Group on Indigenous People, which meets every year in July, to facilitate an exchange of views among policy makers and indigenous people. The meeting in 1998 covered a broad range of issues, and six papers were presented on the protection of rights of holders of traditional knowledge, indigenous peoples and local communities. These papers are available on the web[38].

83. IUCN has launched a four-year project aimed at achieving coherence between the CBD and the WTO, seeking to avoid conflicts and reinforce synergies between the TRIPs regimes and the CBD, most notably in relation to the access to genetic resources and traditional knowledge.

2. Guidance and recommendations

84. WIPO has significant expertise which could be useful to the CST. The reports of the fact-finding missions in countries affected by desertification could provide useful insights into problems of relevance to local people in this field. WIPO is interested in knowing more about the work of the UNCCD. It has established links with the CBD, reinforced at COP 4 by the proposal for a memorandum of understanding between the two organizations, and WIPO will be represented at the CBD ad hoc open-ended working group meeting in January 2000.

85. The CST has pointed out that the protection of intellectual property rights is a concern. The initiative to promote farmers' rights is of direct relevance to the UNCCD and should be supported. Negotiations to revise the IUPGR have taken account of the provisions of the CBD and the need for harmonization has been recognized. However, this is a crowded field. Many of the complex issues of how to ensure legislative protection are already being developed in forums such as the CBD, WIPO, and the WTO. The CST might consider letting the CBD take the lead in these discussions as the latter has a greater stake in them and receive feedback as relevant.

IV. OTHER ORGANIZATIONS

A. UNESCO

86. Various UNESCO conventions are relevant to the protection of the rights of indigenous populations and local communities. Examples are the protection of cultural landscapes in the 1992 World Heritage Convention, the protection against the illicit exploitation of expressions of folklore such as indigenous art and traditional storytelling in the UNESCO-WIPO Model Provisions on Folklore (for others, see Posey, 1996).

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[38] http://www.wipo.int/eng/meetings/1998/indip/index.htm.

87. However, for the purposes of this report, what seems more relevant is the UNESCO Management of Social Transformations (MOST) programme, designed to promote international comparative social science research. The long-term objective of the programme is to establish better links between researchers and policy makers and to emphasize the relevance of social science research for policy formulation. MOST concentrates its activities on the management of change in multi-cultural and multi-ethnic societies. It has a clearing-house offering up-to-date information on the projects, publications and activities of the programme including a "database of best practices".

88. One of the new initiatives of the programme is to include best practices on indigenous knowledge. The database will provide examples that illustrate the appropriate use of indigenous knowledge in "developing cost-effective and sustainable survival strategies for poverty alleviation and income generation". Examples of this might include promoting indigenous land management systems to encourage community control over common property resources, and using existing indigenous institutions to extend credit facilities. Another suggestion is to use indigenous knowledge to increase the fuel efficiency of local stoves instead of replacing them. In collecting the information, MOST is not interested in the details of the indigenous knowledge itself (e.g. the technical specification of the stove) but in the ways that knowledge has been adapted, applied and disseminated.

89. Spreading this kind of information on a globally accessible database can be extremely useful, in order to inform the policy-making process and provide clear examples of best practice. A questionnaire was posted on the web for people to identify and describe any such successful project or activity. After screening by the Centre for International Research and Advisory Networks (CIRAN) and other referees, 27 submissions were approved for inclusion in the database. Most of these examples come from Africa, but there are others from Latin America and Asia. A report outlining the lessons learned from the exercise as well as the practices themselves will be published and posted on the web.

Guidance and recommendations

90. These data could be very interesting for the CST by demonstrating how information on traditional knowledge can be used to good effect for practical purposes. The next steps are currently being discussed by UNESCO and CIRAN.

B. United Nations Environment Programme

91. UNEP is fostering cooperation among the various environmental conventions through a number of activities, including the recently published report by UNEP and the World Bank on interlinkages between the environment conventions. No specific activity relates to traditional knowledge. However, it has been proposed that an inaugural meeting of the subsidiary bodies of the environment conventions be held in Bonn in October 1999. Prior to this, in September, there will be a coordination meeting of the convention secretariats in Geneva. These meetings could provide an

opportunity to discuss what each convention is doing in the field of traditional knowledge.

92. UNEP is undertaking a study of the development of desertification assessment methodologies and land quality indicators, which will address the amalgamation of modern and traditional scientific knowledge in the sustainable use of dryland resources. UNEP also supports networks for exchanging information, assessment of climate impacts and diagnostic studies and research on transboundary water bodies. In its survey and evaluation of existing networks, institutions, agencies and bodies relating to desertification, UNEP has been requested to include information on networks on traditional and local technology, knowledge, know-how and practices. A final report on this study should be published soon.

93. As a result of the lessons learned from the preparation of the Global Biodiversity Assessment, UNEP has prepared a lengthy report entitled "Cultural and spiritual values of biodiversity", which outlines the importance of local knowledge systems and illustrates their key role in the conservation of biological diversity. It is expected to be published in August 1999.

94. The biodiversity country studies include the status of and trends in national biodiversity, threats, measures, values, current expenditures and institutional and legal issues. Social issues and some aspects of traditional knowledge were included in the UNEP guidelines for the country studies. Some countries made an analysis of customary uses of biodiversity and in some cases also of customary law. A number of countries underlined that they do not have comprehensive information about traditional and indigenous knowledge. Dissemination of country studies is done directly by the national executing agencies, as the cost of shipping documents is high[39].

Global Biodiversity Forum

95. The Global Biodiversity Forum funded by UNEP and GEF and hosted by IUCN is designed to contribute to the further development and implementation of the various biodiversity-related instruments at the international, regional, national and local levels. It hosts workshops during or prior to each of the meetings of the convention bodies. During the second session of the UNCCD COP, the Forum focused on linking the various biodiversity-related agendas and hosted four workshops, including one on traditional knowledge and desertification. Six case experiences were presented at the session on indigenous knowledge and desertification, highlighting the importance of the knowledge, practices and innovation systems of indigenous and local communities for conserving biodiversity and combating desertification. The session also looked at policy issues and instruments to ensure the involvement of local and indigenous communities.

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[39] Peru has prepared a CD-ROM version and a few have posted Internet summaries.

96. The Forum proposed a collaborative link between the UNCCD and the CBD ad hoc open-ended working group on traditional knowledge as well as the CBD clearing-house mechanism. The workshop also recognized the need to create incentives to conserve and promote traditional knowledge and establish mechanisms such as community "alternative livelihood funds", which aim to promote activities which create or add value to indigenous knowledge. By supporting national participatory networks, it was suggested that information exchange could be developed, along with appropriate research methodologies and a database on traditional knowledge. With regard to intellectual property rights and benefit sharing, it was recommended that the UNCCD should work with WIPO in developing appropriate mechanisms to protect such rights and to stop the rapid erosion of traditional knowledge relevant to combating desertification. Increased support to enable stakeholders, particularly indigenous and local communities, to participate in the implementation of the UNCCD was also called for.

97. Another workshop on linking biodiversity and desertification took a strategic look at the efforts to promote synergy initiated by the secretariats, and sought to remove perverse policy, legal, institutional and economic obstacles to synergy. Among its recommendations were an appeal to create opportunities for learning from case studies and best practices and improve communications between different stakeholders.

Guidance and recommendations

98. The mandate to oversee the coordination of efforts under the Rio agreements, gives UNEP an important role. The proposed meetings of the secretariats and subsidiary bodies will provide important opportunities to discuss ways of harmonizing programmes at the international level. Given the large number of international institutions which have direct responsibilities for protecting and promoting traditional knowledge, it might be sensible to include this issue within the agenda for discussion at the meetings planned. Among the ideas that could be discussed are the establishment of an informal joint committee to share information on initiatives in this field. Such a committee should not be restricted to the Rio conventions, as input from the Ramsar Convention and WIPO would be particularly helpful and it could make use of electronic conferencing facilities.

C. Others

99. Several other organizations have made important contributions to understanding the role of traditional knowledge. Only a few can be mentioned here. An Organization of African Unity (OAU) task force on community rights and access to biological resources met in Addis Ababa in March 1998 to draft model legislation on community rights and access to biological resources which would ensure the continuing control by local communities of their natural resources, knowledge and technologies. This legislation is expected to provide a model for African nations to develop national codes on community rights and access to biological resources, community knowledge and technologies. The model law is largely based on article

8(j) and related provisions of the CBD and on the decisions of the COP at its fourth session (Egziabher, 1999). The Southern African Development Community is discussing the adoption of a regional framework based on the OAU model.

100. Other relevant international organizations and bodies are the International Centre for Agriculture and Biosciences (CAB International), the Consultative Group on International Agricultural Research (CGIAR), the International Crops Research Institute for the Semi-arid Tropics (ICRISAT), the International Fund for Agricultural Development (IFAD), the International Forum on Forests (IFF), the Intergovernmental Authority on Development (IGAD), the Observatory of the Sahara and the Sahel (OSS), the United Nations Conference on Trade and Development (UNCTAD), the United Nations Economic and Social Council (ECOSOC), the Centre for Science and Technology for Development (CSTD), the United Nations Institute for Training and Research (UNITAR), the United Nations Development Programme (UNDP), the Arab Centre for the Study of Arid Zones and Dry Lands (ACSAD), the Permanent Inter-State Committee for Drought Control in the Sahel (CILSS), the Southern African Development Community (SADC), the World Bank, etc. This list is not exhaustive. Countless non-governmental organizations and community-based organizations are also looking into these issues. While it has not been possible to describe here the programmes of these institutions, they could provide a very important contibution in terms of support to work at the grass-roots level.

V. CONCLUSIONS AND RECOMMENDATIONS

101. This report demonstrates that there is no shortage of organizations working on the issue of traditional knowledge at the international level and there are many benefits to be gained from the experience of other bodies. There is clearly a great deal of experience and documentation which should be collected and heeded before any new initiatives are suggested.

102. This report also demonstrates that many of the issues surrounding the promotion, protection and use of traditional and local knowledge are being addressed through international collaborative efforts. However, interpretation of these efforts at the local level may be another story. Yet, it is at this local level that the ultimate fruits of such work should be harvested.

103. The CBD secretariat has done much to spread the word about the important provisions of that Convention and how they can be extended to help local community groups. Most organizations and many authors look to the terms of this Convention as providing an international standard and a new legal framework for the rights of traditional and local communities. It could be suggested, however, that the global debate has been dominated by the CBD and its priorities. Much of the discussion in biodiversity forums concerns the position of indigenous and local peoples in the face of predatory practices of companies eager to prospect and patent biodiversity. The questions of equitable sharing of benefits and ensuring that knowledge is shared on mutually agreed terms is certainly relevant to the dryland areas covered in the

UNCCD[40]. However, many of the practices and much of the know-how that can be used to develop better ways to resolve the presenting problems of land degradation are not likely to be incorporated into a patenting application. This includes, for example, know-how relating to practices for use of mulch and minimum tillage, and techniques for water harvesting.

104. On the other hand, the crucial importance of research and development agencies which seek to work with communities *in situ* to develop their technologies is less well addressed. All instruments and organizations outlined above subscribe to the view that traditional knowledge is valuable and participation essential. However, few cases exist where interventions are actually based on incorporation and full development of this knowledge (van Leeuwen, 1999).

105. Within the international debate, the CST can usefully emphasize the importance of cooperation with local people, and ensure that their voices are heard at the policy planning stage. The obligations of the UNCCD to promote training and capacity-building among various agencies and government departments should be highlighted but the question of incentives for cooperation also needs to be addressed. The Ramsar Convention guidelines could provide a useful basis for seeing how best to involve local people in participatory management.

Recommendations

106. A closer working relationship between the secretariat and the various institutions related to other conventions also working in this field seems essential. The secretariat could usefully be involved in key meetings and initiatives currently proposed, especially those by the CBD and UNEP.

107. Greater attention needs to be focused on questions of *in situ* research and development, capacity-building for extension services and incentives for collaboration at the local level. This should highlight not only technical but also institutional issues, such as tenure security, customary law and processes of decentralization.

108. The convention secretariats have a role to play in letting people know about the UNCCD and the opportunities it fosters. They can usefully put people in touch with best practices and experienced practitioners. Monitoring the impact of the Convention is also of value. However, there is a need to avoid creating new initiatives at the international level, given the ongoing work programmes of the various conventions. Rather there is a need to generate synergies through collaboration.

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[40] One third of all United States medicines are derived from arid area plant species.

109. Coordination at the national level is essential to the effective implementation of the UNCCD and the other related conventions. In many cases, decision and policy makers in charge of implementation of the various conventions belong to the same government ministry, but not necessarily the same unit. Encouraging linkages at this level is very important. The national focal points of the UNCCD and CBD have an important role in spreading information about the implementation of the conventions. They should be encouraged to collaborate and could usefully be listed in one central database. The CBD clearing-house mechanism is already exploring the idea of joint web pages for the related environment conventions, which would accentuate their interlinkages and make it easier to find related information.

110. There is a great deal of discussion of the issues surrounding the protection and potential use of traditional knowledge. It is questionable how much of it is of direct benefit to policy makers, decision makers and local communities. Careful reflection on the aims and outputs of any information-gathering exercises needs to be encouraged and a clear identification of how these might serve the interests of local pople. It should be remembered that the ultimate test of the UNCCD is the improvement of conditions on the ground, for those in countries affected by desertification.

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